

## CLAIMS

1. A catalyst supply device for supplying catalyst slurry from a catalyst slurry supply vessel to a reaction vessel by means of a positive displacement pump, wherein said catalyst slurry supply vessel, the reaction vessel and the positive displacement pump are connected to one another by means of three-way piping,

an automatic suction valve, which opens when said positive displacement pump sucks and closes when said pump does not suck, is interposed between said catalyst slurry supply vessel and a crossing of said three-way piping,

an automatic discharge valve, which opens when said positive displacement pump discharges and closes when said pump does not discharge, is interposed between said reaction vessel and the crossing of said three-way piping,

an enclosed fluid is enclosed in said positive displacement pump and at least a part of piping between said positive displacement pump and the crossing of said three-way piping, and

a predetermined volume of the catalyst slurry is sucked from said catalyst slurry supply vessel into the piping between the crossing of said three-way piping and said positive displacement pump through said automatic suction valve when said positive displacement pump sucks, and the predetermined volume of said catalyst slurry is discharged through said automatic discharge valve to be supplied to said reaction vessel when said positive displacement pump discharges.

2. The catalyst supply device according to Claim 1, wherein said automatic discharge valve opens after said positive displacement pump starts discharge.

3. The catalyst supply device according to Claim 1 or 2, wherein said positive displacement pump is a diaphragm pump, and the fluid enclosed in said diaphragm assembly is the same as a solvent which is used for said catalyst slurry, further the piping between the crossing of said three-way piping and said positive displacement pump is placed above the crossing of said three-way piping.

4. The catalyst supply device according to Claim 1 or 2, wherein said positive displacement pump, and said automatic suction valve, the automatic discharge valve and the crossing of said three-way piping are integrally structured.

5. The catalyst supply device according to Claim 1 or 2, wherein an inner diameter of a flow path through which said catalyst slurry flows is set to be larger than 2mm, and is set such that an average linear flow rate calculated from the flow volume of the catalyst slurry is larger than 3.0cm/s.

6. The catalyst supply device according to Claim 1 or 2, wherein when providing a measurement instrument in the flow path of said catalyst slurry, a connection of said measurement instrument and the flow path is an inner nozzle structure.

7. The catalyst supply device according to Claim 1 or 2, wherein said catalyst slurry supply vessel has an agitating blade.

8. The catalyst supply device according to Claim 1 or 2, wherein a filter is provided in the flow path to supply said catalyst slurry to said catalyst slurry supply vessel.

9. The catalyst supply device according to Claim 1 or 2, wherein said reaction vessel is a reaction vessel for fabricating polyolefin.